

IN THE CLAIMS:

Please cancel claims 15, 16 and 17 without prejudice or disclaimer of the subject matter thereof.

A complete listing of claims follows:

1. (currently Amended) A die coating for use on the surface of a metal mould or die component contacted by molten metal in low pressure or gravity die casting, said die coating including a porous layer of ceramic material produced by co-deposition, using a thermal spraying procedure, of a powder of said ceramic material and a powder of ~~a suitable~~ an organic polymer material and, after the co-deposition, heating ~~of~~ said ~~polymer material~~ co-deposited layer on the mould or die component to cause its removal remove the polymer material, and provide said porous layer of ceramic material.

2. (currently Amended) A die coating according to claim 1, wherein said ceramic powder being is at least one ceramic powder selected from ~~at least one metal compound such as the group consisting of~~ oxides, nitrides, carbides and borides, ~~preferably from the group comprising alumina, titania, silica, stabilised zirconia, silicon nitride, boron nitride, silicon carbide, tungsten carbide, titanium borides and zirconium boride.~~

3. (currently Amended) A die coating according to claim 1, wherein said ceramic powder being is at least one mineral compound powder selected from ~~at least one mineral compound such as the group consisting of~~ clay minerals, hard rock ore and heavy mineral sands ~~such as those of ilmenite, rutile and/or zircon.~~

4. (Currently Amended) A die coating according to claim 3, wherein said ~~ceramics~~ ceramic powder being is obtained from scoria or pumice.

5. (currently Amended) A die coating according to ~~any~~

~~preceeding~~ claim 1, wherein said organic polymer powder is formed from a thermoplastic material.

6. (currently amended) A die coating according to ~~any~~ ~~preceeding~~ claim 1, wherein each of said ceramic and polymer powders is of relatively narrow size spectrum.

7. (currently Amended) A die coating according to claim 6, wherein said ceramic and polymer particles ~~being~~ are of particle sizes not more than about 60 μm and not less than about 1 μm in the case of said ceramic powder and not less than about 5 μm in the case of the polymer powder.

8. (currently Amended) A process for providing a die coating on the surface of a metal mould or die component, comprising the steps of forming wherein an initial coating of organic polymer material and ceramic material ~~is formed~~ on the surface by co-deposition of powders of the materials by a thermal spraying procedure, and heating the initial coating ~~is heated~~ so as to remove the polymer material and leave a coating of ceramic material with voids therein, thus forming a porous coating of the ceramic material.

9. (currently Amended) A process according to claim 8, wherein said polymer material ~~being heated for removal~~ is removed by combustion and/or decomposition.

10. (currently amended) A process according to claim 8 ~~or~~ 9, wherein said thermal spraying procedure is either flame spraying, plasma spraying or electric arc spraying.

11. (currently amended) A process according to ~~any one of claims 8 to 10~~ claim 8, wherein a substantially uniform die coat is provided over all surfaces of the mould or die components, which define a die cavity.

12. (currently Amended) A process according to claim 11, wherein said coating ~~having~~ has a thickness of from about 250 to 400 μm .

13. (currently Amended) A process according to claim 12, wherein said coating has ~~having~~ a thickness of from about 300 to about 400 μ m.

14. (currently Amended) A metal mould or die component having a surface for contact by molten metal in low pressure or gravity die casting, said surface being coated fully, or in a section or sections thereof, by a die coating according to ~~any one of claims 1 to 7~~ claim 1.

Claims 15-17 (canceled).

18. (new) A die coating according to claim 5, wherein said thermoplastic material is selected from the group consisting of polystyrene, styrene-acrylonitrile, polymethacrylates, polyesters, polyamides, polyamide-imides and PTFE.

19. (new) A die coating according to claim 2, wherein said ceramic powder is at least one ceramic powder selected from the group consisting of alumina, titania, silica, stabilized zirconia, silicon nitride, boron nitride, silicon carbide, tungsten carbide, titanium borides and zirconium boride.

20. (new) A die coating according to claim 3, wherein said ceramic powder is at least one mineral compound powder selected from the group consisting of clay minerals, hard rock ore and heavy mineral sands.

21. (new) A die coating according to claim 20, wherein said ceramic powder is at least one mineral compound powder selected from the group consisting of ilmenite, rutile and zircon.

22. (new) A metal mould or die component having a surface for contact by molten metal in low pressure or gravity die casting, said surface being coated in a section or sections thereof with a non-porous ceramic die coating and in another

section or sections thereof, with a die coating including a porous layer of ceramic material produced by co-deposition, using a thermal spraying procedure, of a powder of said ceramic material and a powder of an organic polymer material and, after the co-deposition, heating said co-deposited layer on the mold or die component to remove the polymer material, and provide said porous layer of ceramic material.

23. (new) A metal mold or die component having a surface for contact by molten metal in low pressure or gravity die casting, said surface being coated fully, or in a section or sections thereof, by alternating layers of a non-porous ceramic die coating and a die coating including a porous layer of ceramic material produced by co-deposition, using a thermal spraying procedure, of a powder of said ceramic material and a powder of an organic polymer material and, after the co-deposition, heating said co-deposited layer on the mold or die component to remove the polymer material, and provide said porous layer of ceramic material.

24. (new) A die coating according to claim 1, wherein the heating is to a temperature of up to 450°C to remove the polymer material.

25. (new) A die coating according to claim 7, wherein the heating is to a temperature up to 450°C to remove the polymer material.

26. (new) A die coating for use on the surface of a metal mold or die component contacted by molten metal, said die coating including a porous layer of ceramic material produced by co-deposition, of a powder of said ceramic material and a powder of an organic polymer material using thermal spraying procedure followed by heating said co-deposited layer to a temperature up to 450°C to remove the polymer material, and provide said porous layer of ceramic material.

27. (new) A process for providing a die coating on a surface of a metal mold or die component comprising the steps of:

co-depositing powders of an organic polymer material and powders of a ceramic material on the surface of the metal mold or die component by a thermal spraying procedure;

heating the metal mold or die component to a temperature up to 450°C to remove the polymer material and leave a porous coating of the ceramic material.

28. (new) A coated metal mold or die component including a porous layer of ceramic material formed by co-deposition of a powder of said ceramic material and a powder of an organic polymer material, and heating the co-deposited layer to a temperature of up to 450°C to remove the polymer material, and provide said porous layer of ceramic material.

29. (new) The coated metal mold or die component of claim 28, wherein the ceramic material is at least one material selected from the group consisting of oxides, nitrides, carbides and borides.

30. (new) The coated metal mold or die component of claim 29, wherein the ceramic material is at least one material selected from the group consisting of alumina, titania, silica, stabilized zirconia, silicon nitride, boron nitride, silicon carbide, tungsten carbide, titanium borides and zirconium boride.

31. (new) The coated metal mold or die component of claim 28, wherein the ceramic material is at least one mineral compound or heavy mineral sand selected from the group consisting of clay minerals, hard rock ore, ilmenite, rutile and zircon.

32. (new) The coated metal mold or die component of claim 28, wherein the ceramic material is obtained from scoria or pumice.